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IN THE U.S. PATENT AND TRADEMARK OFFICE

APPLICANT: Kazuyuki TOYODA et al. CONF. NO.: 6177  
APPL. NO.: 08/905,971 GROUP: 1763  
FILED: August 5, 1997 EXAMINER: R. Zervigon  
FOR: SUBSTRATE PROCESSING APPARATUS

**RECEIVED**

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**REQUEST FOR RECONSIDERATION**

Honorable Commissioner for Patents  
Washington, D.C. 20231

April 10, 2002

Sir:

In reply to the Office Action dated October 10, 2001, the period for response having been extended for three (3) months to April 10, 2002, the following remarks are respectfully submitted in connection with the above-identified application.

**REMARKS**

Claims 1-36 are pending in this application. Claims 1 and 14 are independent claims. Reconsideration of the rejection is respectfully requested in view of the following remarks.

Applicants respectfully submit that paragraph 6 on page 8 and paragraph 7 on page 9 of the Office Action mistakenly lists U.S. Patent No. 5,186,718 as being applied to claims 5, 6, 17, 18 and 19. Applicants submit that the correct citation instead of U.S. Patent No. 5,186,718 should be U.S. Patent No. 4,405,435 to Tateishi in view of JP 2-152251 to Takagi.

The Office Action rejects: (1) claims 1-4, 7-16 and 20-36 under 35 U.S.C. §103(a) as

being unpatentable over U.S. Patent No. 4,405,435 to Tateishi et al. (hereafter Tateishi) in view of JP 2-152251 to Takagi (hereafter Takagi); (2) claims 5, 6, 17, 18 under 35 U.S.C. §103(a) as being unpatentable over Tateishi in view of Takagi and further in view of U.S. Patent No. 5,616,208 to Hideki (hereafter Hideki); and (3) claim 19 under 35 U.S.C. §103(a) as being unpatentable over Tateishi in view of Takagi and further in view of U.S. Patent No. 4,582,720 to Yamazaki. These rejection are respectfully traversed.

Initially, Applicants respectfully submit that the combination of Tateishi and Takagi fails to teach or suggest each and every feature as set forth in the claimed invention. According to independent claims 1 and 14 of the present invention, *inter alia*, each of the plurality of modules is detachably attached to the substrate transfer section. A first substrate transfer device, for transferring substrates to the plurality of modules, is provided in the substrate transfer section.

In section 5 of the Office Action, the Office Action asserts that:

- (i.) “a substrate transfer section embodied by Tateishi as item 52/53, Figure 4 (column 5, lines 40-55);
- (ii.) a plurality of modules as embodied by Tateishi as processing chambers for processing substrates (item 54, Figure 4; column 5, lines 40-55) and a plurality of modules embodied by Tateishi’s first and second intermediate processing or treatment chambers (items 52-55, Figure 4; column 5, lines 40-55) for processing substrates;
- (iii.) first substrate transfer means embodied by Tateishi’s item 62 of Figure 2 (column 5, lines 55-68) provided in;
- (iv.) a substrate transfer section (items 52/53, Figure 2) capable of transferring a substrate to the plurality of modules.”

According to these assertions, the Office Action seems to consider items 52/53 as the substrate transfer section, item 54 or items 52-55 as the plurality of modules, and item 62 as the

first substrate transfer device. As such, applicants respectfully submit that this configuration is completely different from the present invention and that the Office Action is misunderstanding Tateishi.

For instance, in Tateishi, the chamber 52 and the chambers 53-55 are arranged in the sealed casing 51 in the direction of movement of a base plate 3 to be treated (see Tateishi, column 5, lines 42-48). The base plate 3 is transferred from the chamber 52 to chamber 55 by the conveyor belts 65, 66, 72, 73, 78, 79, 87 and 88 in a straight line in a transverse direction. In other words, there is no plurality of items 54 or items 52-55. There is only one chamber 54 and one chamber 53, one chamber 54 and one chamber 55, which means that there are no plurality of chambers which can be regarded as the plurality of modules as set forth in the present invention.

Furthermore, as apparent from the above statements, the chamber 54 requires one chamber 52 and one chamber 53 in a straight line in a transverse direction, which means that the plurality of modules is not attached to the substrate transfer section, as set forth in the claimed invention.

In Tateishi, item 62 is a cassette elevator, and the cassette elevator cannot transfer the base plate 3 to the chamber 52 or to the plurality of modules. Further, Tateishi's item 62 is allegedly regarded by the Office Action as the first substrate transfer device, however, it is not provided in the chambers 52/53, which is allegedly regarded by the Office Action as the substrate transfer section.

Furthermore, the Office Action considers the item 52/53 as the substrate transfer section on the one hand, and considers the same item 52/53 as part of the plurality of modules on the

other hand. For example, as stated in section 5 of the Office Action:

- (i.) “a substrate transfer section embodied by Tateishi as item 52/53. Figure 4 (column 5, lines 40-55)
- (ii.) ...a plurality of modules embodied by Tateishi as first and second intermediate processing or treatment chambers (item 52-55 Figure 4; column 5, lines 40-55) for processing substrates.”

In view of the above, applicants respectfully submit that Tateishi fails to disclose or suggest the substrate processing apparatus comprising a substrate transfer section, a plurality of modules, each of the plurality of modules being attached to the substrate transfer section, and a first substrate transfer device for transferring substrates to the plurality of modules provided in the substrate transfer section, as set forth in the claimed invention.

In an attempt to make up for the deficiencies found in Tateishi, the Office Action imports Takagi. For example, the Office Actions asserts that:

- “xv. a substrate transfer section is embodied by Takagi as item 14, Figure 1 (certified STIC translation, page 12, 3<sup>rd</sup> paragraph); and
- xv. a plurality of detachably (1<sup>st</sup> paragraph, page 11) attached modules (items 14/2/3, Figure 1; certified STIC translation, page 10-12) and a plurality of modules embodied by Takagi as processing or treatment chambers (item 1, Figure 1; certified STIC translation, page 10-12) for processing substrates – The modules are capable of being attached to and detached from the substrate transfer section (page 11, 1<sup>st</sup> paragraph)”

The Office Action also asserts that:

- “9. Regarding applicant’s position that Takagi fails to teach “detachably attached modules” is completely inaccurate. Modules, per the page 49, lines 20-25 directly parallel Takagi’s process chambers (2) and pumps (3) with “numbers” that can be adventitiously selected in consideration of the number of required processes.” (page 11, 1<sup>st</sup> paragraph, STIC translation).

However, applicants respectfully submit that Takagi’s phrase of “Three pairs of the process chambers (2) and pumps (3) are shown in the example of Figure 1, but the numbers can

be adventitiously selected in consideration of the number of required process” (see page 11, 1<sup>st</sup> paragraph, STIC translation) does not mean that chambers (2) and pumps (3) are detachably attached. Even when the chambers (2) and pumps (3) are not detachably attached, the numbers of the chambers (2) and pumps (3) can also be adventitiously selected in consideration of the number of required processes.

Further, the Office Action considers the item 14 as the substrate transfer section on the one hand, and also considers the same item 14 as part of the plurality of modules on the other hand. For example, the Office Action states:

- “xv. a substrate transfer section embodied by Takagi here as item 14, Figure 1, (certified STIC translation, page 12, 3<sup>rd</sup> paragraph)
- xvi. a plurality of detachably (1<sup>st</sup> paragraph, page 11) attached modules (item 14/2/3, Figure 1; certified STIC translation, page 10-12)”

Still further, the Office Action asserts in section 11:

“Additionally, the Takagi reference teaches “a first substrate transfer device” according to the Takagi translation. “Next, the transportation mechanism (11) for the semiconductor wafer (10), which is to be treated, will be explained. As the upper plane view of Figure 2 clearly suggests, a cassette elevator chamber...” (page 12, STIC translation).

However, applicants respectfully submit that item 11 is not a substrate transfer device as set forth in the claimed invention, but is merely a cassette elevator mechanism (see page 13, lines 11, 16, 23; page 14, line 7, STIC translation). Further, each of the wafer transportation mechanisms (14) are located on the front side of each process chamber (2) (see page 12, lines 17-24, STIC translation), which means that the wafer transportation mechanism (14) cannot be the first substrate transfer device as set forth in the present invention for transferring substrates to the plurality of modules.

Still further, the above assertions – “Next, the transportation mechanism (11) for the semiconductor wafer (10), which is to be treated, will be explained. As the upper plane view of Figure 2 clearly suggests, a cassette elevator chamber...”(page 12, STIC translation) is an apparent mistranslation. Applicants respectfully submit that the original Japanese laid-open document reads “a cassette elevator mechanism” not “a cassette elevator *chamber*”.

Applicants further respectfully submit that Lee and Yamazaki both fail to make up for the deficiencies found in Tateishi and Takagi.

In view of the foregoing, applicants respectfully submit that the present invention is not obvious over the combination of Tateishi in view of Takagi, Lee and/or Yamazaki. Applicants further respectfully submit that independent claims 1 and 14 are allowable over the cited references for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1-36 under 35 U.S.C. §103(a) is respectfully solicited.

### **CONCLUSION**

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.


Applicants respectfully petition under the provisions of 37 C.F.R. §1.136(a) and §1.17 for a three (3)-month extension of time in which to respond to the Examiner's Office Action. The appropriate Extension of Time Fee is attached hereto.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 **to schedule a Personal Interview.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,

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